

**Application No.: 10/716,621**

**REMARKS**

The indication of allowable subject matter in claims 7, 10, 11, 16, 17 and 18 is acknowledged and appreciated. In view of the following remarks, it is respectfully submitted that all claims are in condition for allowance.

Claim 1 is the sole elected independent claim and stands rejected under 35 U.S.C. § 103 as being unpatentable over Moore. This rejection is respectfully traversed for the following reasons.

The Examiner admits that Moore does not disclose or suggest that electrodes 48, 52 contain at least one member selected from the group consisting of ruthenium, rhodium and osmium, but alleges that it would have been obvious to make electrodes 48, 52 from Rh because "this would be substituting a known equivalent material for the same purpose as described by Moore [0024, 0026]." However, it is respectfully submitted that the relied on portions of Moore are completely silent as to an Rh alloy being a known equivalent for use with the electrodes 48, 52. Moore merely discloses Rh as a material for its bit line 42, but does not suggest that the materials used for its bit line 42 could also be used for its electrodes 48, 52. In direct contrast, Moore expressly prefers silver as the electrode material (see lines 19-20 of paragraph [0026] and last three lines of paragraph [0028]).

Accordingly, it is respectfully submitted that Moore does not disclose or suggest each and every limitation of claim 1. In this regard, MPEP § 2143.03 under the section entitled "All Claim Limitations Must Be Taught or Suggested" sets forth the applicable standard for establishing obviousness under § 103 that the Examiner has failed to satisfy:

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To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (citing *In re Royka*, 180 USPQ 580 (CCPA 1974)).

In the instant case, the pending rejection does not "establish *prima facie* obviousness of [the] claimed invention" as recited in claim 1 because Moore fails the "all the claim limitations" standard required under § 103.

Nevertheless, even assuming *arguendo* that Rh is an equivalent material for the electrodes 48,52, such alleged equivalence is not a sufficient basis for making a rejection under § 103 because the Examiner has not provided the requisite *objective* evidence *from the prior art* that "suggests the desirability" of the proposed modification. The Examiner's allegations of mere "equivalency" throughout the Office Action are an improper basis for establishing obviousness under § 103. Specifically, a *prima facie* showing of obviousness can only be established if the prior art "suggests the desirability" of the proposed modification using *objective* evidence, rather than simply evidencing that the modification can be made in view of an alleged equivalency (nonetheless, as will be described below, claim 1 as amended recites a novel combination which can provide new results not recognized nor considered by the cited prior art).

The Examiner is directed to MPEP § 2143.03 under the subsection entitled "Fact that References Can Be Combined or Modified is Not Sufficient to Establish *Prima Facie* Obviousness", which sets forth an applicable standard for establishing obviousness under § 103 that the Examiner has failed to satisfy:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. (*In re Mills*, 16 USPQ2d 1430 (Fed. Cir. 1990)).

In the instant case, even assuming *arguendo* that Moore can be modified to include Rh for its electrodes 48,52, it is submitted that the "mere fact that [Moore] can be modified ... does not

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render the resultant modification obvious" because nowhere does the *prior art* "suggest the desirability of the modification" as set forth by the Examiner. Again, contrary to the Examiner's assertions, the relied on portions of Moore do not suggest using its bit line material as alleged "equivalents" for the material used in the electrodes 48, 52. Instead, Moore suggests silver as the preferred material for electrodes 48, 52 and is completely silent as to Rh.

Solely in order to expedite issuance of the present application, claim 1 has been amended, without prejudice/disclaimer to the subject matter embodied thereby, to incorporate the features recited in claims 2-3. In this regard, only Applicants' specification provides the rationale for providing the claimed materials for the electrode(s) and phase-change recording medium in the particular arrangement set forth in claim 1. Specifically, the *combination* of electrodes sandwiching a phase-change recording medium with the claimed materials can enable a reduction in thermal diffusion caused by impurities, for example, as compared to a structure where an electrode formed of Al and a phase-change recording medium formed of GeSbTe are used (compare Fig.'s 2 and 3 of Applicants' drawings).

Claims 2 and 3 were rejected under § 103 over Moore in view of Lane and Van Brocklin et al., respectively. These rejections are respectfully traversed for the following reasons. In both instances, it is respectfully submitted that the Examiner has again failed to provided the requisite *objective evidence from the prior art* that "suggests the desirability" of the proposed modification. The Examiner is further directed to MPEP § 2143.01 under the subsection entitled "Fact that the Claimed Invention is Within the Capabilities of One of Ordinary Skill in the Art is Not Sufficient by Itself to Establish *Prima Facie* Obviousness", which sets forth another applicable standard for establishing obviousness under § 103 that the Examiner has failed to satisfy:

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A statement that modifications of the prior art to meet the claimed invention would have been [obvious] because the references relied upon teach that all aspects of the claimed invention were *individually* known in the art is *not* sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. (citing *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993)).

In the instant case, even assuming *arguendo* that Moore, Lane and Van Brocklin et al. "teach that all aspects of the claimed invention [are] individually known in the art", it is submitted that such a conclusion "is not sufficient to establish a *prima facie* case of obviousness" because there is no *objective* reason on the record to modify the teachings of the cited prior art. Indeed, Moore does not even disclose that it is well-known to use Rh/Ru in its electrodes 48,52, let alone provide objective evidence for suggesting the desirability to do so.

The relied on portions of Lane and Van Brocklin et al. are completely silent as to why the disclosed materials would be preferred over that disclosed by Moore, let alone in the specific combination of an electrode containing ruthenium as a main ingredient with a phase-change recording medium formed of GeSbTe. For example, Lane merely discloses ruthenium as a viable upper electrode material for a capacitor generally, independently of any relation to a phase-change recording medium let alone one formed of GeSbTe. In fact, the relied on portions of neither Lane nor Van Brocklin et al. suggest the desirability of Ru and GeSbTe as compared to other materials, let alone in combination with each other; but simply identify them as known materials individually. Accordingly, at best, the Examiner has attempted to show only that the elements of the claimed invention are *individually* known without providing a *prima facie* showing of obviousness that the *combination* of elements recited in the claims is known or suggested in the art.

None of the cited prior art, alone or in combination, disclose or suggest the specific combination of ruthenium + GeSbTe, which can effect a reduction in thermal diffusion as

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recognized solely by Applicants. Indeed, as set forth in detail throughout Applicants' specification, providing the claimed arrangement can enable the capability to obtain high heat resistance and prevent mutual impurity diffusion, thereby providing the capability to prevent the electrodes from mutually diffusing with the phase-change recording medium (see page 10, lines 7-21 of Applicants' specification). None of the cited prior art recognizes these or any other effects resulting from the claimed combination, and therefore do not provide the requisite motivation to conceive of the claimed *combination*.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon are also patentable. In addition, it is respectfully submitted that the dependent claims are patentable based on their own merits by adding novel and non-obvious features to the combination.

Based on the foregoing, it is respectfully submitted that all pending claims are patentable over the cited prior art. Accordingly, it is respectfully requested that the rejections under 35 U.S.C. § 103 be withdrawn.

**CONCLUSION**

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's

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amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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